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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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|-----------------|-------------|----------------------|---------------------|------------------|

10/700,475

11/05/2003

Young Sang Byun

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04/03/2007

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EXAMINER

AFTERGUT, JEFF H

ART UNIT

PAPER NUMBER

1733

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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3 MONTHS

04/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/700,475

Applicant(s)

BYUN ET AL.

Examiner

Jeff H. Aftergut

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>2-26-07</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Claims 1-11 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on April 5, 2006.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 28, 29, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Byker et al.

Byker et al taught that it was known at the time the invention was made to employ a vacuum platen 52 as an upper stage of a device for holding a substrate in a bonding apparatus wherein the process included arranging a substrate 12 proximate the upper stage 52 wherein portions of the substrate sag (column 13, lines 6-11) and transmitting a suction application (vacuum) to prevent the sagging associated with the operation (column 13, lines 3-35).

With respect to claim 29, note that the reference suggested the generation of vacuum and the transmission of the suction to the platen. Regarding claim 31, the substrate was stated to be planar with the surface of the member 52, see the portions referred to above.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Byker et al in view of Cantrill.

Byker et al is discussed above in paragraph 3 and applicant is referred to the same for a complete discussion of the reference. The reference taught all of the steps of the invention as claimed except there is no indication that one skilled in the art would have independently transmitted suction to the platen (note that the language "independently transmitting a second suction applicator to a second sagging portion of the substrate =merely requires that the platen in Byker have independent suction means thereon to apply suction independent in differing zones).

The reference to Cantrill suggested that those skilled in the art would have provided a suction table with independent suction means for different zones on the table in order to allow one to operate the lamination operation with varied size components. The applicant is more specifically referred to column 1, lines 10-65 of Cantrill. Clearly, one skilled in the art at the time the invention was made would have found it obvious at the time the invention was made to control the suction of the platen such that plural suction mechanisms were provided which operated independently of one another in Byker et al in order to accommodate different size work pieces with the device wherein one was able to activate certain suction ports of the platen while leaving others inactivated as taught by Cantrill.

6. Claims 12-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Byker et al in view of Jaffe and Cantrill.

Byker et al suggested that those skilled in the art at the time the invention was made would have known how to apply vacuum to a surface prior to attaching the surface in a bonding operation. The reference to Byker et al suggested that one skilled in the art would have understood that the upper plate would have sagged as a function of gravity for example. In order to avoid this problem, the reference taught that one applied suction over the entire surface of the substrate in order to retain the substrate to the platen in the pressing and bonding operation. the reference failed to teach that one: (1) had the ability to move the individual suction mechanisms toward and away from the surface being treated with the suction, and; (2) would have provided individual suction means for each suction device in order to be able to vary where the suction was applied.

However, it was well known in the manufacture of a liquid crystal device to incorporate a vacuum platen which included individual means which were separable movable in order to facilitate the pick up of the component in the laminating operation wherein one provided the same as separately movable in order to eliminate any sagging in the process of lifting the substrate as taught by Joffe et al. More specifically, applicant is referred to column 18, lines 31-38, Figures 20, 21, and 23. Note that as disclosed the vacuum application means in Joffe et al included individual suction cups 302 as well as independent suction stations 310 which were associated with the flat surface of a platen and which were moveable pneumatically via cylinders 298 and gantry 294. It

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would have been understood that in Joffe et al one skilled in the art would have understood that where sagging existed one would have not only applied adequate suction to the suction cup mechanism but also would have understood that the individual suction cups themselves would have been moved in order to ensure a flat surface. The combination, nonetheless, failed to teach that one skilled in the art would have included individual means for application of suction to different regions of the suction retaining devices (i.e. multiple suction application mechanisms which were each associated with different suction openings in the platen).

The reference to Cantrill suggested that those skilled in the art would have provided a suction table with independent suction means for different zones on the table in order to allow one to operate the lamination operation with varied size components. The applicant is more specifically referred to column 1, lines 10-65 of Cantrill. Clearly, one skilled in the art at the time the invention was made would have found it obvious at the time the invention was made to control the suction of the platen such that plural suction mechanisms were independently controlled to provide suction in different regions of the assembly in order to accommodate different size work pieces as suggested by Cantrill whereby one employed separate individually moveable suction mechanisms in order to better control the sagging of the substrate as suggested by Joffe et al.

It should be noted regarding the various dependent claims that those skilled in the art would have known that if one region was sagging to impart greater suction in that region and/or regulate the position of the individual suction cup associated with the

region where the sagging existed. Additionally, the prior art clearly suggested the same mechanisms for practicing the process of picking up the substrate and one viewing the same would have readily appreciated the necessity of having the substrate planar prior to the lamination operation.

Response to Arguments

7. Applicant's arguments with respect to claims 12-31 have been considered but are moot in view of the new ground(s) of rejection.

Applicant is advised that Joffe clearly included suction means which was movable from the receiving surface as noted above. The suction means in Joffe was related to an upper platen and the use of the same prevented the sagging in the substrate as expressed in Joffe. Thus, there was a reason to incorporate the individually movable suction members in the operation of Byker who also desired to eliminate sagging in the upper substrate associated with the upper platen. It should be noted that the reference to Cantrill provided the system with the ability to draw a vacuum in discrete zones and one skilled in the art would have been motivated to look to the same in the processing of Byker in order to provide for varying size substrates in the bonding operation.

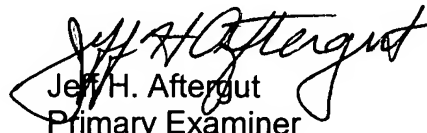
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA
March 29, 2007